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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,509	09/06/2005	Kesao Yamasaki	F-8484	9266

28107 7590 04/20/2007
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EXAMINER	
BHAT, NINA NMN	
ART UNIT	**PAPER NUMBER**
1764	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,509	YAMASAKI, KESAO	
	Examiner	Art Unit	
	N. Bhat	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *6-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☒ Claim(s) *6-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 6-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not dependent from a multiply dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-10 not been further treated on the merits.

2. Action on the merits of claims 1-5 follows:

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stog USP 4,381,972 in combination with Goetz et al.

Stog' 972 teaches the invention substantially as claimed. Stog teaches coke oven door which includes temperature rising means in the vicinity of the a heat insulating box provided on the inner side of an oven door structure which is

subsequently charged with coal particles and includes means for opening and closing a door jamb via a seal plate pressed against the door jamb. The door includes a frame structure, which includes shield bars, which prevent then entry of coal particles laterally or vertically. Specifically, Stog'972 teaches a the door comprising a metallic body or frame (2) having a U-shaped provided with outwardly facing flanges, designed to make contact with respective door jambs of a coking chamber. The inner surface of frame (2) carries a thermally insulating layer (10) which overlain by a relatively thin metallic shell (49) which may be divided into a multiplicity of sections substantially coextensive with sections (5, 6, 7 and 8) of a heat conducting metal plate defined there with a vertical gas channel.[Note Column 2, lines 2-67] These sections function to promote temperature rise or increased heat transfer at this area of the coke oven door. Stog'972 further teach that in Figure 5, sections 6', 7' show a modified heat transmitting plate which do not overlap but are separated from one another by small gaps. The plate sections are secured to the frame (2) by spaces each comprising a first member bolted to the frame with interposition of a heat transmitting disk. The construction and arrangement of the sections and heat transmitting disk functions to promote the temperature rise in the vicinity of the door as claimed by applicant and would obviously prevent coal particles from moving into the shield.

However Stog '972 does not specifically teach the bar plate joints/connection as claimed by applicant nor applicant's bottom-less gas migration and isolation chamber

Giertz et al. teach that a gas channel is mounted in the door frame of the coke oven chamber.[Note Column 2, lines 50-56]. Giertz et al. further teach that the gas

channel surrounds the coke oven door has at least one permanent connection with the coke oven chamber and includes a gas collection space. Giertz et al. teach that as a result of local pressure peaks the crude gas can get through the inner door seal into the gas change where it expands and is no longer able to pass through the other seal. Since the gas channel is connected with the coke oven chamber the crude gas cooling in the gas channel goes into the coke oven rather than leaking outside with this construction and arrangement the local pressure peaks near the door of the coke oven chamber can be lowered quickly. Giertz specifically teaches that providing the gas channel as described around the door seal, the tar that condenses out improves the sealing capacity of the door seal. The gas channel as claimed by Giertz et al. functions to apply different pressures against the door seal. [Note Column 3, lines 1-35]

It would have been obvious to one having ordinary skill in the art to provide a frame and heat shield construction and arrangement as taught by Stog which further includes the gas channel of Giertz et al. which functions equivalently to applicant's bottom less gas migration and isolation chamber. Stog teaches that the arrangement of the heat conducting plate does provide a gas channel. To include the gas channel as taught by Giertz et al. which to the coke oven door/heat shield/heat transmitting/frame and seal arrangement renders applicant's invention as a whole obvious and would be a permissible substitution as there is clear suggestion in the art both in Stog and Giertz et al. that improving heat transfer and including a gas channel wherein the pressure at the door seals or jambs have been taught to be influenced by the addition of a gas channel around the door frame an including heat transmitting material at the door. Both

temperature and pressure are interrelated variable is the operation of the coke oven door seals and therefore renders applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tamura et al. teach a method of controlling the operating temperature of a coke oven. Koschlig et al. teach an oven door assembly. Michler teach a coke oven door seal. Baird teaches a coke oven door and a plated mounted to be freely movable relative to the door frame. Urbye et al. teach coke oven door comprising a flat sealing diaphragm secured on the door body.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

N. Bhat
Primary Examiner
Art Unit 1764